PORTA ®ONE

# Porta Billing100®   MR-11

Installation Guide

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PortaBilling100 Installation Guide
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Please address your comments and suggestions to: Sales Department, PortaOne Inc., Suite #400, 2963 Glen Drive, Coquitlam, BC, V3B 2P7 Canada.

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Preface

This document provides a general overview of the PortaBilling100 installation process.

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The hard copy of this guide is updated at major releases only, and does not always contain the latest material on enhancements occurring in-between minor releases. The online copy of this guide is always up-to-date, integrating the latest changes to the product. You can access the latest copy of this guide at:
www.portaone.com/resources/documentation/

Conventions

This publication uses the following conventions:
- Commands and keywords are given in **boldface**
- Terminal sessions, console screens, or system file names are displayed in `fixed width font`

Caution indicates that the described action might result in program malfunction or data loss.

NOTE: Notes contain helpful suggestions about or references to materials not contained in this manual.

Timesaver means that you can save time by performing the action described in the paragraph.

Tips provide information that might help you solve a problem.

1. Introduction

PortaBilling runs on most modern UNIX operating systems (FreeBSD, Linux, Sun Solaris, etc.), assuming these are equipped with basic things such as an ANSI C compiler. However, it might be difficult for an inexperienced system administrator to install and configure the operating system in such a way as to meet all of the requirements and provide the best performance. Installing all the prerequisite software (libraries, Perl modules, MySQL server) could also be a time-consuming task.

The PortaBilling JumpStart installation CD provides a quick and seamless way to perform a complete server installation from scratch, in less than 15 minutes! It contains the installation media for FreeBSD 5.4, with all the necessary packages, plus PortaBilling itself.

The installation wizard uses a text-mode GUI. Use arrow keys to change your selection, "**Tab**" to move between fields, and "**Enter**" to confirm your choice.

Hardware and software requirements

Recommended configuration:

- Pentium 4 CPU 2.8 GHz
- Motherboard with 533MHz/800MHz system bus support
- 1 GB of RAM

Make sure that your servers have been installed and equipped with all the required hardware, especially:

- Network card
- CD-ROM (in the case of an IDE CD-ROM, it is recommended that it be connected as a slave on the secondary IDE channel)
- Video adapter/monitor/keyboard (required only during the installation process)
- At least one disk drive
- USB slot (on the master server)

Please check that other hardware installed in your server (such as network adapter, RAID controller, etc.) is supported by FreeBSD. You can check this on the FreeBSD website: **http://www.freebsd.org**.

During installation you will be prompted for network configuration parameters. Please determine these before installation, consulting your network administrator if necessary. It is possible that you will have to

perform the installation before the network is available (in your office, for example, while the servers will be located in a server hosting center), but you will need to enter the correct data anyway. Please have the following ready:

- Planned hostnames and IP addresses of the master and slave servers
- Subnet mask and address of the default gateway
- Address of your DNS server

If you have a hardware RAID controller available in your system, configure the RAID array. The recommended configurations (depending on the amount of hard drives in the system) are as follows:

- 2 disks – RAID (mirroring)
- 3 disks – RAID 1 (mirroring) on the first two disks, third one left as a hot spare
- 4 disks – RAID 1+0 (mirroring + striping)
- More than 4 disks – RAID 1+0 (mirroring + striping) on the first four disks, others left as a hot spare

2. Installation Process

Step 1: Insert the USB dongle

Before you start the installation, insert the provided USB dongle into one of the available USB ports on your master server. It must stay in place the entire time in order to ensure normal system operation.

Step 2: Power up, boot order set-up

Power up the computer which you plan to use as a server. Enter the BIOS set-up and make sure that the CD-ROM drive is first on the list of boot devices. If you are installing a dual-server configuration, start your installation with the master server.

```
                          PhoenixBIOS Setup Utility
     Main      Advanced     Security      Power     Boot      Exit

                                                   Item Specific Help

        ATAPI CD-ROM Drive
       +Removable Devices
       +Hard Drive                            Keys used to view or
                                              configure devices:
                                              <Enter> expands or
                                              collapses devices with
                                              a + or -
                                              <Ctrl+Enter> expands
                                              all
                                              <Shift + 1> enables or
                                              disables a device.
                                              <+> and <-> moves the
                                              device up or down.
                                              <n> May move removable
                                              device between Hard
                                              Disk or Removable Disk
                                              <d> Remove a device
                                              that is not installed.

     F1   Help    ↑↓  Select Item   -/+   Change Values     F9    Setup Defaults
     Esc  Exit    ←   Select Menu   Enter Select ▶ Sub-Menu F10   Save and Exit
```

Note: This image is only an example. The BIOS on your system might look different.

Save your changes and exit.

Step 3: Insert the CD-ROM

While rebooting the system, insert the PortaBilling installation CD into the CD-ROM drive. If you do not insert it soon enough and get a "no operation system" error (or a previously installed operating system starts

its boot-up process), press the **Reset** button and make sure that you are now booting from the CD.

Step 4: Launch the installation process

First, it asks for your clarification to boot from the CD

```
Press any key to boot from CD.._
```

You will know that JumpStart installation has begun if you see a screen similar to the following one:

```
CD Loader 1.2

Building the boot loader arguments
Looking up /BOOT/LOADER... Found
Relocating the loader and the BTX
Starting the BTX loader

BTX loader 1.00  BTX version is 1.01
Console: internal video/keyboard
BIOS CD is cd0
BIOS drive A: is disk0
BIOS drive C: is disk1
BIOS drive D: is disk2
BIOS 638kB/128960kB available memory

FreeBSD/i386 bootstrap loader, Revision 1.1
(root@pre-release.portaone.com, Fri Aug 12 12:39:01 UTC 2005)
Loading /boot/defaults/loader.conf
_
```

Now, before proceeding any further you will see the following screen.
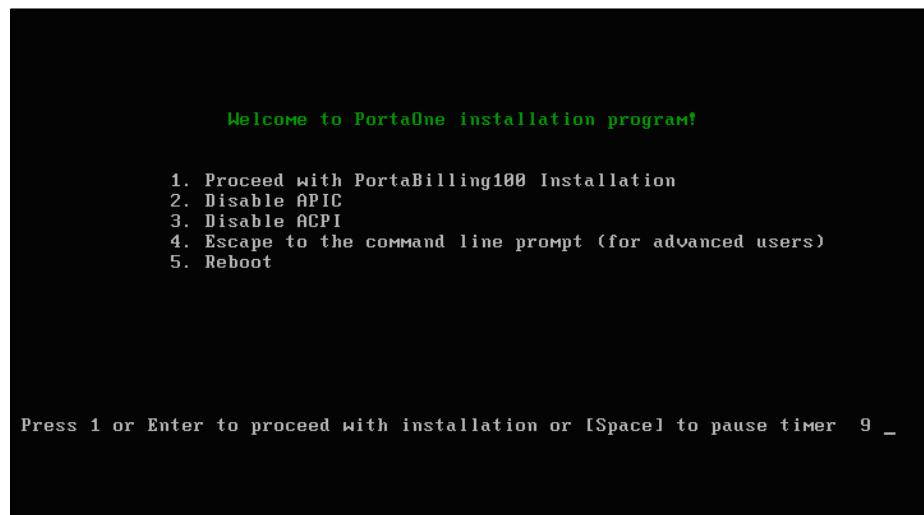
If you select first choice it will start the installation for many hardware configurations. But in some cases with the choice 1, it will give you a device mounting error due to some different hardware systems. In this case start the installation again and when you see this screen select the option 2, 3 or both to enable/disable the APIC/ACPI features.

For example if you are installing in a computer with a motherboard ASUS P4VP-MX, you have to disable the APIC. In this case at the above screen select 2. Then it will show you the disabled features and asks to press 1 or enter to proceed.
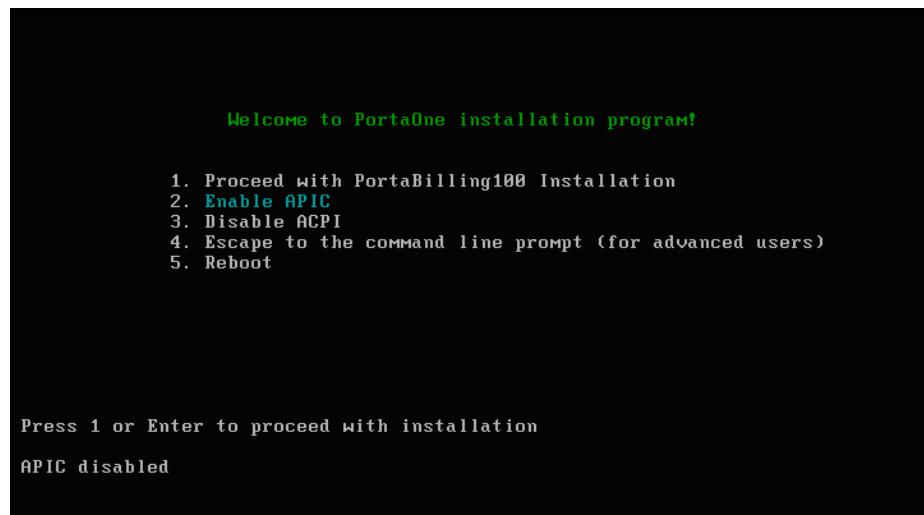
Step 5: Welcome screen

After this, the installation process begins. First you will see the PortaBilling welcome screen:
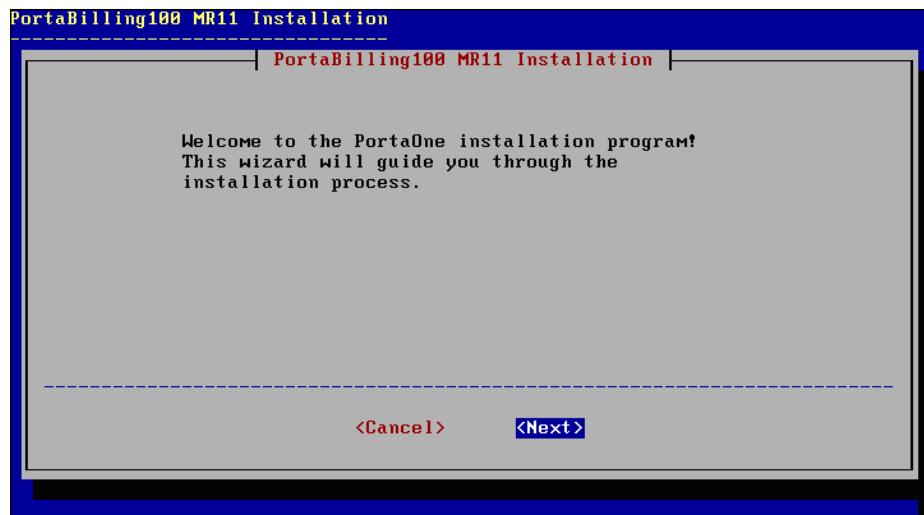
Press **Enter** to continue.

Step 6: Choose the installation type

Next you will have to choose the installation type. This will determine which packages are to be installed on this host. If you are installing a dual-server configuration, it is recommended that you install the master server first.
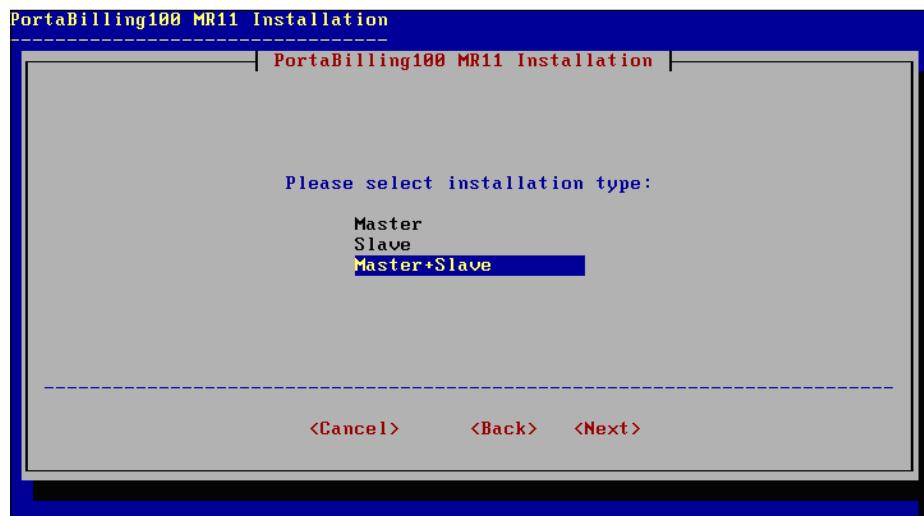

Step 7: Disk partitioning, overview

Now you will have to allocate the hard drive partitions where FreeBSD and PortaBilling are to be installed. If you only have

one hard drive in your system, or you have configured your available disks as a single volume array, go to step 9 directly; if not, choose the desired disk in step 8.

Step 8: Disk partitioning, choose disk

If you have more than one disk in your system, you will have to choose the disk on which you would like to create the FreeBSD partitions. If in doubt, choose the first disk on the list.

Note: Installation is always performed on a single disk. If you want to utilize multiple drives (e.g. install the DB on a separate disk), this can be done after installation.

```
PortaBilling100 MR11 Installation
---------------------------------
                 | Please select destination drive |

        Please select destination drive

      ad0 4096M ATA/IDE disk device    #
      ad1 4096M ATA/IDE disk device


      ---------------------------------------------------------
             <Cancel>      <Back>    <Next>
```
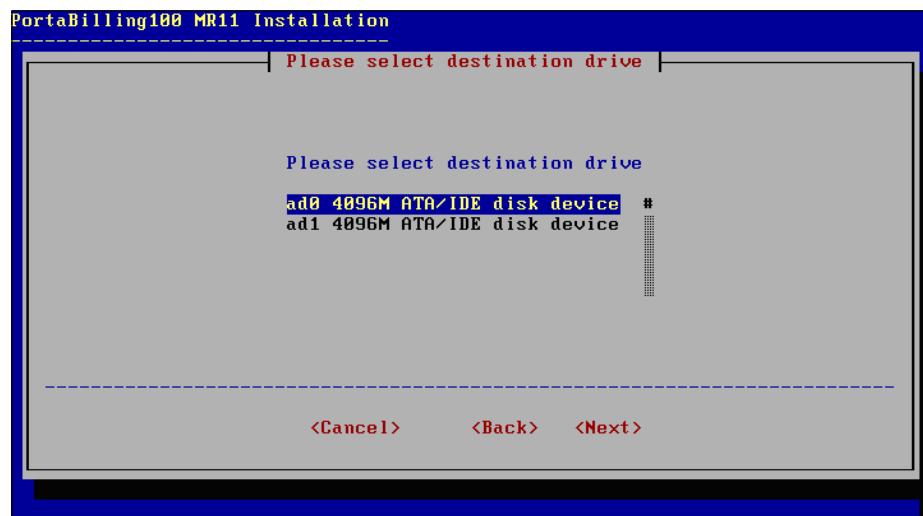
Step 9: Disk partitioning, slice layout

```
PortaBilling100 MR11 Installation
---------------------------------
                 | Partitions manager |


              ad0 4096M disk

      Mount point    Size (MB)
      /            252_____    6%
      swap         1196_____   29%
      /var         1541_____   37%
      /usr         1105_____   26%


      ---------------------------------------------------------
             <Cancel>      <Back>    <Next>
```
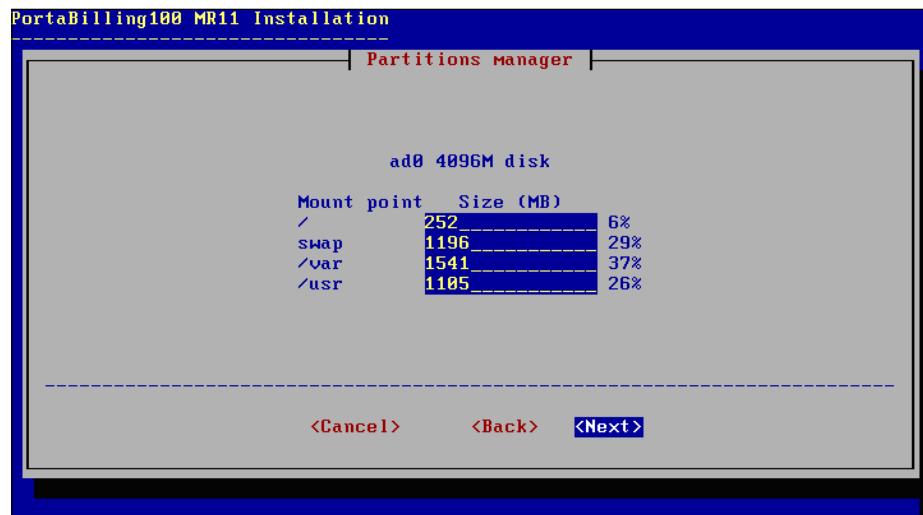
You will be prompted to enter slice sizes to hold different file systems; or choose the default ones.

Step 10: Enter IP address of Slave/Master for stand-alone installations

If you are installing a stand-alone master or slave, you must enter the IP of the other machine. For example, If you select master in step 6, you will be asked for the slave IP, as shown below.
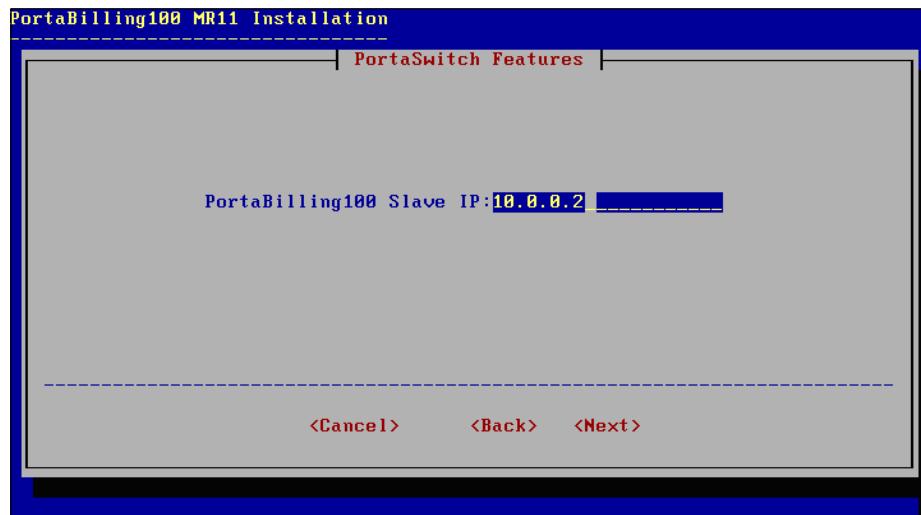
If you select Master+Slave in step 6 you do not see this screen and direct to step 11.

Step 11: Network configuration

Fill in the desired fields for network configuration in this menu.
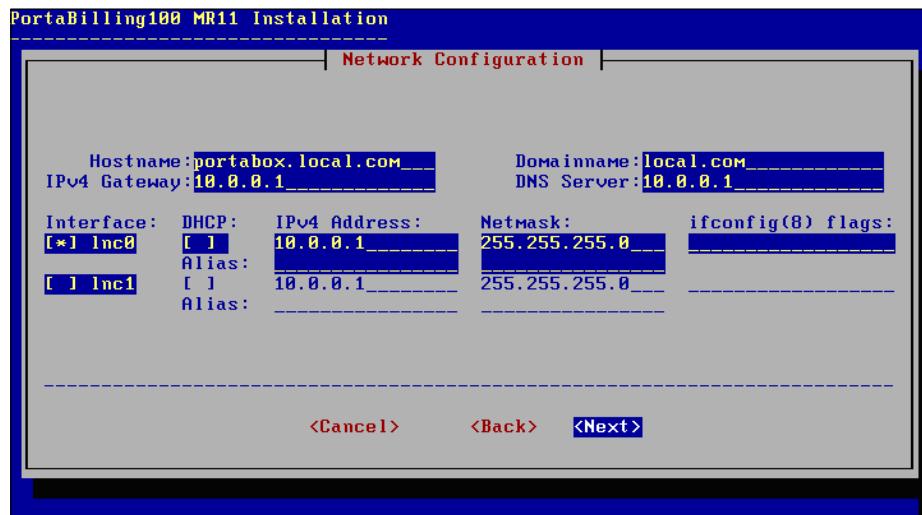
To set the check boxes for interface and DHCP, use the space bar. Use the Tab key to move to the other fields. If you have multiple interfaces, set at least one in which the machine is connected to the internet. You can leave Alias fields and ifconfig(8) flags empty.

Step 12: Time zone configuration

Proper adjustment of your clock and time zone is essential to achieving accurate billing. Usually people choose the time zone where the server is physically located, or the one which is local to a majority of the system administrators.
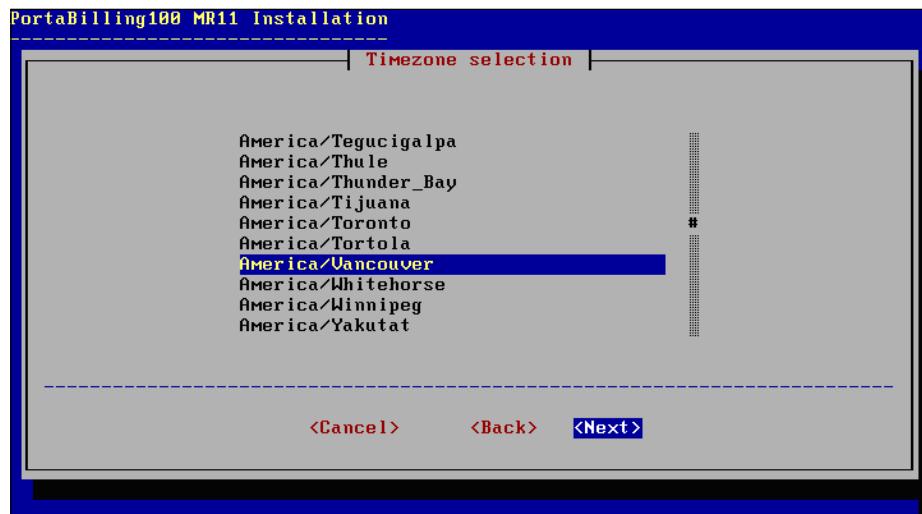
NOTE: Always choose the same time zone when installing the master and slave servers. A server's time zone, as set up during installation, should not be changed later, as this will affect the CDR data stored in the database. In fact, this is never necessary, since every user of the web interface will see the data in his preferred time

zone anyway. Thus it does not matter at all to your users which time zone is on the server.

# Step 13: Setting up root password and user account

Choosing the super user password is very important. You will need this to perform system administration or system recovery. Choose a password which is difficult to guess or crack. Add another user account especially for remote administration.


Step 14: Start installation

Your confirmation is required before the disk layout is changed and the partitions are reformatted. Press **Enter** to proceed.

```
PortaBilling100 MR11 Installation
--------------------------------
                  ┤ User confirmation requested ├


    To install this software your hard drive will be re-partitioned,
    as result some or all data on it may be lost.

    Last Chance! Are you SURE you want continue the installation?

    If you're running this on s disk with data you wish to save
    then select "Cancel" to abort the installation. Select "Next" to
    proceed with installation.

    We can take no responsibility for lost disk contents!


    ---------------------------------------------------------------

               <Cancel>        <Back>    <Next>
```

During installation you will see screens similar to the following:

```
PortaBilling100 MR11 Installation
--------------------------------




                   ┤ Unpacking base system ├
    ███████████████████████         32%

Installing file: x minsys/usr/share/games/fortune
```
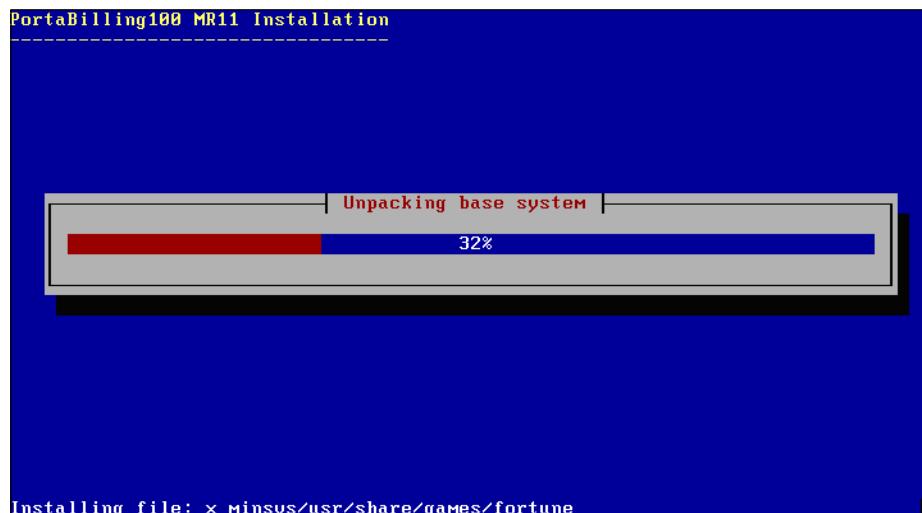
Step 15: Prepare to reboot

Installation is now finished. Press **Enter** when you reach the following screen. After the system begins its reboot process, remove the installation CD from the CD-ROM. Do not forget to enter BIOS again and change the priority of boot devices so that the hard drive is the first attempted boot device. (This ensures a faster reboot when recycling the server.)
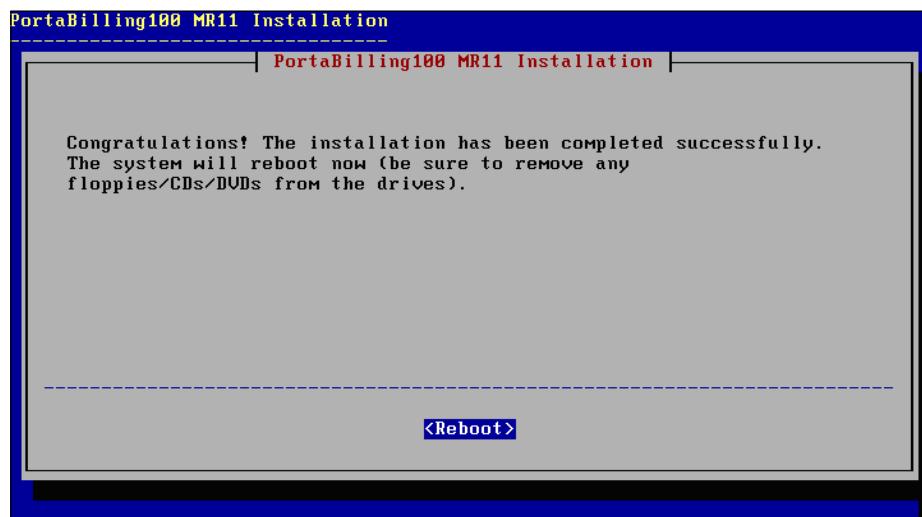
Please make sure to remove floppies/CDs/DVDs before rebooting. If it hangs up when it starts to reboot, please eject the CD and restart the machine.

Step 16: Check that the system is able to reboot to a normal state

It is good to ensure that the system is in a stable state and that it returns to normal operations on reboot without intervention– especially if there is no keyboard or other peripherals attached. Following a normal reboot, the screen should look like this:

If you have not properly inserted the USB key, your authentication will fail, and the screen below will be shown.

```
Starting devd.
Mounting NFS file systems:.
Starting syslogd.
ELF ldconfig path: /lib /usr/lib /usr/lib/compat /usr/X11R6/lib /usr/local/lib
a.out ldconfig path: /usr/lib/aout /usr/lib/compat/aout /usr/X11R6/lib/aout
Starting usbd.
Starting local daemons:.
Updating motd.
Starting ntpd.
Configuring syscons: blanktime.
Starting sshd.
Initial i386 initialization:.
Additional ABI support:.
Starting cron.
Local package initialization:radiusd: can't open perlAAA.so: can't open /dev/uge
n0
 apache mysqld mysqld-slave radcheck.pl.
Additional TCP options:.
Starting background file system checks in 60 seconds.

Tue Jul  5 07:51:17 PDT 2005

FreeBSD/i386 (portabox.local.com) (ttyv0)

login: 
```

Press Ctrl + Alt + Del if you need to reboot.

Step 17: Prepare system for transportation (optional)

If you need to transport the system to another location (e.g. hosting center) or otherwise power down the system safely, proceed as follows:

- Wait until the system finishes booting
- Log in as root
- Type `shutdown -p now`
- Wait until either the system powers down on its own, or until the message "The operating system has halted" appears, and then power off the server